

## **SUMMARY**

# **FINAL ENVIRONMENTAL IMPACT STATEMENT**

## **UPPER BLUE STEWARDSHIP PROJECT**

**MAY 2004**



Photo by D. Graham



**U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE**

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# Final Environmental Impact Statement

## Upper Blue Stewardship Project

<b>Proposed Action and Location:</b>	Upper Blue Stewardship Project Area Dillon Ranger District White River National Forest Summit County, Colorado
<b>Lead Agency:</b>	USDA-Forest Service White River National Forest Dillon Ranger District PO Box 620 680 Blue River Parkway Silverthorne, CO 80498
<b>Responsible Official:</b>	Martha J. Ketelle, Forest Supervisor White River National Forest
<b>For Further Information:</b>	Peech Keller, Project Team Leader White River National Forest Dillon Ranger District PO Box 620 680 Blue River Parkway Silverthorne, CO 80498 (970) 468-5400

**Abstract:** This Final Environmental Impact Statement has been prepared in response to a site-specific proposal for a stewardship project in the Upper Blue area of the White River National Forest. The Upper Blue project area is approximately 14,000 acres of the Tenmile Range between Frisco and Breckenridge, CO. The Proposed Action includes: reintroducing ponderosa pine and Douglas-fir to the landscape; creating more structural diversity through group fellings and patch clearcuts; using prescribed fire to regenerate lodgepole; decommissioning system/unclassified roads and converting some of them to non-motorized trails; evaluating social trails and either decommissioning them or adding them to the system; designating dispersed campsites along Miners Creek; improving nordic skiing opportunities; developing 6 interpretive sites; making Christmas trees available for commercial and public use; and allowing for private landowners to match fire mitigation treatments they implement on private land over adjacent public lands. This Environmental Impact Statement discusses the purpose and need for the Proposed Action; describes alternatives that were developed; identifies potential direct, indirect and cumulative impacts of implementing each alternative; and suggests mitigation measures. Three alternatives, including No Action, are considered in the Final Environmental Impact Statement. The Alternatives are Alternative A: No Action, Alternative B: Proposed Action, and Alternative C: Minimize Prescribed Fire Use. The Final EIS identifies Alternative C Modified as the Selected Alternative.

A Draft EIS was released for public comment on June 10<sup>th</sup>, 2003. Sixteen responses were received. A summary of those comments and the agency's responses are included in Appendix L of the Final EIS. The Final EIS has been revised as a result of these comments.

**IMPORTANT NOTICE:** A Record of Decision accompanies the Final EIS. Reviewers have been informed of their obligation to structure their participation in the *National Environmental Policy Act* process so that it is meaningful and alerts the agency to the reviewer's position and contentions (*Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978)). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the Final EIS (*City of Angoon v. Hodel* (9<sup>th</sup> Circuit, 1986) and *Wisconsin Heritages, Inc. v. Harris*, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980)).

**Appeals:** The Record of Decision accompanying the EIS is subject to appeal pursuant to 36 CFR 215.7. A written Notice of Appeal must be submitted within 45 days after publication of the notice of decision. Notice of Appeal must be sent to: USDA-Forest Service, Rocky Mountain Region, Attn: Tom Thompson, Appeals Deciding Officer, P.O. Box 25127, Lakewood, Colorado, 80225.

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# **SUMMARY OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE UPPER BLUE STEWARDSHIP PROJECT**

## **S.1 INTRODUCTION**

This summary presents a brief overview of the Final Environmental Impact Statement (FEIS) for the Upper Blue Stewardship Project. Because this document is a summary of the complete Environmental Impact Statement (EIS), great detail is not included. More information, including analysis, may be found in the full FEIS available at the Dillon Ranger District office, Silverthorne, Colorado.

The Dillon Ranger District, White River National Forest (WRNF) is proposing the Upper Blue Stewardship Project. The project area covers 14,000 acres in Summit County, CO. It is bordered on the west by the Tenmile Range, on the east by Highway 9, on the north by the town of Frisco and the south by the town of Breckenridge (see Figure S.1).

## **S.2 BACKGROUND**

The Upper Blue Stewardship Project was originally proposed in 1999. It involved extensive scoping and public involvement on a local, regional and national level. The original NOI was published on April 5, 1999. The FEIS for the Upper Blue Project was completed in December 2000 and the ROD was signed in March 2001. Because the White River Forest Plan revision was nearing completion and conditions had changed, the White River Forest Supervisor decided to withdraw the Decision in May 2001. After the issuance of the *Revised White River National Forest Land and Resource Management Plan* (Forest Plan) in July 2002, it was deemed timely to readdress the Upper Blue Stewardship Project. The decision was made to revise the Upper Blue EIS. This EIS incorporates the 2000 Upper Blue project file and tiers to the Final EIS for the Forest Plan – 2002 Revision and is consistent with the Goals, Objectives, Standards and Guidelines of the 2002 Forest Plan.

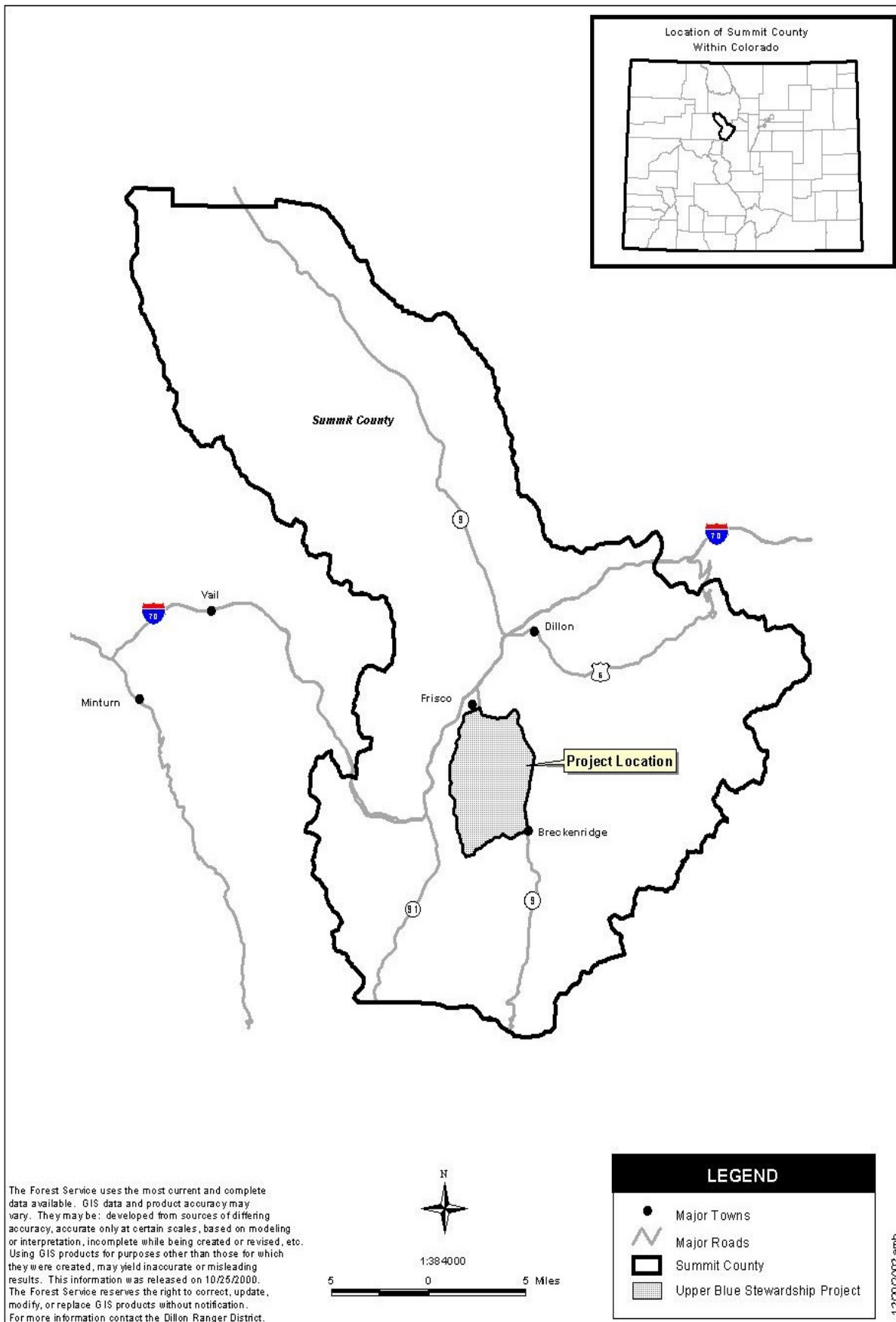
## **S.3 THE PROPOSED ACTION**

Through this Proposed Action the White River National Forest intends to implement the White River National Forest Land and Resource Management Plan, 2002 Revision. This will occur on 14,000 acres in the Upper Blue Project Area. The details of the proposed action are described below.

### **S.3.1 Improvement of Biodiversity**

The White River National Forest (the Forest) proposes to improve forest health, wildlife habitat capability, and fire resiliency by improving biodiversity within the project area through greater species and structural diversity using a variety of vegetation treatments. Approximately 1,384 acres of vegetation management is proposed and would be phased in over the next ten years, allowing for adaptive management. Vegetation treatments would be accomplished through a combination of personal and commercial use including post and pole sales, firewood permits, Christmas tree harvest, timber sales, burning, stewardship contracts, and service contracts. Products other than logs (POL) may have to be sold as firewood or burned if there is no commercial market. If sold as firewood, it could take many years for the POL material to be removed.

**Figure S.1 Relative Location Of The Upper Blue Stewardship Project**



This would be accomplished by:

■ **Planting 403 acres of Douglas-fir, or a mix of ponderosa pine and Douglas-fir.**

***Ponderosa Pine and Douglas-fir Units:*** Mixed species stands of ponderosa pine and Douglas-fir historically grew within the project area. The goal of this treatment is to increase the presence of this mixed species community. Thirty-three acres of new habitat will be created by clearcutting, site prep burning, and then planting ponderosa pine and Douglas-fir. This treatment is common to all of the action Alternatives (Units 300, 307).

***Douglas-fir Units:*** The goal of these units is to increase Douglas-fir on approximately 370 acres. Lodgepole pine will be removed by either commercial harvest, service contracts, prescribed burns or Forest Service personnel as described below in order to reestablish Douglas-fir stands in the project area.

Approximately 52 acres of lodgepole pine would be broadcast burned to eliminate 75% of the lodgepole overstory and then planted with Douglas-fir (Unit 406).

Approximately 25 acres of lodgepole pine would be clearcut, site prep burned, and then planted with Douglas-fir (Unit 403).

Approximately 293 acres of lodgepole pine would be thinned and then underplanted with Douglas-fir in areas where there is past evidence of Douglas-fir trees (Units 400, 401 and 402). Approximately 178 acres (Units 401 and 165 acres of Unit 402) will require a non-commercial thinning (to remove current overstory) as a site preparation method prior to planting to reduce competition while still leaving some nurse trees for shade and wind protection. Approximately 115 acres (Units 400 and 20 acres of Unit 402) will require a commercial overstory thinning as a site preparation method prior to planting to reduce competition while still leaving some nurse trees for shade and wind protection. If Douglas-fir trees are found, non-Douglas-fir overstory conifers one tree height around it will be removed to allow for natural regeneration of Douglas-fir. All spruce, subalpine fir, and understory lodgepole pine, except as needed to maintain existing Douglas-fir, will be left to provide for forest diversity and snowshoe hare habitat. In these thinning areas where the opportunity exists, regeneration of aspen will be emphasized with group selection openings by cutting only overstory lodgepole pine.

■ **Uneven-age management over an area totaling 1,591 acres**

***Group Selection/Patch Clearcut Units:*** These units (numbered 1000 to 1025) are dominated by a lodgepole pine overstory. This treatment will create uneven-aged stands across 1,591 acres. Groups of trees will be treated as follows:

- Group selection (all lodgepole pine and remnant aspen trees in the group are cut and merchantable trees removed; Engelmann spruce and subalpine fir trees are left),
- Patch clearcuts (in areas where aspen exists), or
- Stand density management (thinning the existing trees to an average spacing of twelve feet by twelve feet, leaving all Engelmann spruce, subalpine fir and snags).
- If, after monitoring the initial cuts, it is determined that the residual slash needs treatment (for visual, fuels, or regeneration purposes), the slash will be lopped and scattered; lopped, scattered and broadcast burned; or piled and burned.

The highest priority for group selection cuts of lodgepole pine is given to sites that have the potential to increase the aspen component. Second priority is given to sites where existing

Engelmann spruce/subalpine fir regeneration has potential to increase the spruce/fir component. Third priority will be areas dominated by lodgepole pine, in order to increase early seral stage lodgepole. If regeneration surveys show that there is not sufficient stocking, planting will be considered. This treatment will create young groups of aspen, Engelmann spruce/subalpine fir, and lodgepole pine. All Engelmann spruce and subalpine fir will be left in group selection units and in stand density management treatments to improve visual quality adjacent to past and new clearcuts.

Group selection may be up to two acres in size. Patch clearcuts for aspen may be up to ten acres in size. Patch clearcuts will occur where remnant aspen exists under a lodgepole pine overstory, thus setting back succession by removing the lodgepole pine overstory and opening the area up for aspen to resprout. All openings to regenerate aspen will be broadcast burned or ripped to promote sprouting.

On average, up to twenty-five percent of the unit (408 acres) will receive group selection or patch clearcuts. That portion of the remaining seventy-five percent of the unit adjacent to new and past clearcuts may receive stand density management (thinning) to improve visual quality. Spacing of the stand density management will range from six feet to eighteen feet for approximately 150 feet from the edge of the clearcuts.

All units will receive the same type of treatment except for Units 1000, 1022 and 1020. Mature aspen clones dominate some areas within Units 1000 and 1022. No group selection or patch clearcuts will be implemented in these mature clones. Rather, the group selection and patch clearcuts will be concentrated along the outside edge of the clones to encourage spread of the aspen through sprouting. The width of these treatments will not exceed 100 feet and will be more linear in shape. Unit 1020 (51 acres) will receive a group selection cut on approximately ten acres on the north and east boundaries of the Unit where slopes are less than forty percent. Then, since trees are non-harvestable on slopes greater than 40% when using conventional logging, the entire Unit will receive a stand replacement prescribed burn.

#### ■ **445 acres of stand replacement prescribed burns**

Approximately 10-20% of the area in each of these units (2000, 2001, 2002, 2008, and 2017) will require pre-treatment consisting of felling trees to create enough ground fuels to carry the prescribed fires. Following the prescribed burns, the units will naturally regenerate to either aspen or lodgepole pine. The prescribed burn objective is to eliminate approximately seventy-five percent of the existing trees. The units total 445 acres.

#### ■ **90 acres of special cuts/burns to provide gladed ski areas within the Breckenridge Nordic Center area permit boundary.**

This treatment has the goal of creating approximately 90 acres of open or gladed skiing opportunities within the Breckenridge Nordic Center (BNC) permit boundary. The four units (4000, 4001, 4002, and 4003) were clearcut in the early 1990's as part of the South Barton Timber Sale. The silvicultural prescription for the units that were a part of the South Barton Timber Sale is being changed as a part of this Environmental Impact Statement to allow for manipulation of the slash and regeneration to provide for additional skiing opportunities in the area. Under this new prescription, the minimum number of trees per acre necessary for a stocked stand does not apply (Forest Plan, page 2-13). Depending upon the number of seedlings left after treatment, the stand may remain a created opening indefinitely.



■ **Making available approximately 10,500 Christmas trees from approximately 340 acres for personal and to some extent commercial use**

Christmas trees will be made available as a by-product of some of the proposed treatments. Species available will include lodgepole pine, Engelmann spruce and subalpine fir depending upon the treatment objective of those acres. Approximately 10,500 Christmas trees will be made available from approximately 340 acres. Lodgepole pine Christmas trees will be made available in Units 301, 302, 303, 304, 306, 404, and 407. Engelmann spruce and subalpine fir Christmas trees will be made available in Units 1000 and 1022.

■ **Improving wildlife habitat through vegetation treatments**

Where remnant aspen exists, the group selection and patch clearcuts will encourage aspen regeneration.

All snags will be left in timber harvest units unless needed to be fallen for safety reasons.

All group selection units to regenerate spruce/fir will include falling and leaving a cluster of 15 lodgepole pine trees per acre treated (acres rounded upward) to increase downed woody debris and snowshoe hare hiding cover.

In timber harvest units where no post-treatment burning is planned, an assessment will be made of the amount of downed woody debris prior to implementation. If the amount is below the Forest Plan biodiversity standard, specific trees will be marked for falling to meet the standard. In timber harvest units where post-treatment burning is planned, an assessment will be made of the amount of downed woody debris after implementation. If the amount is below the Forest Plan biodiversity standard, specific trees will be marked and fallen adjacent to the unit to meet the standard.

<b>S.3.2 Improvement of Wildfire Defensibility</b>
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The Forest proposes to improve the wildfire defensibility of structures on private land by reducing tree crown density and ladder fuels in the wildland/urban interface zone. This treatment would involve thinning and group selections of the vegetation along 12 miles of the national forest/private land boundary on the east and north sides of the project area to achieve fuels reduction. The only interior private land boundary included is the Red Tail Ranch. Stand density management may occur on up to 450 acres of National Forest System (NFS) land within 100 - 300 feet of private lands (the Interface Zone), in areas where a similar amount is occurring on private lands. During this treatment up to 30% of the canopy (up to one-third of the basal area of the overstory) will be removed as firewood and/or small diameter products. Tree removal will emphasize lodgepole pine. All of the understory trees may be removed during this first treatment. Subsequent treatments will be needed after the trees are wind-firm with a goal of separating the crowns of remaining trees by 15 feet. Some of this treatment will be accomplished by the group selection treatments (approximately 60 acres). This treatment is common to all of the action Alternatives.

■ **Interface Zone**

Treatment of the Interface zone will be administered by or in cooperation with Summit County and/or the Colorado State Forest Service under the Good Neighbor Agreement. This work will be performed by: firewood cutters, adjacent landowners, groups, and/or associations under the guidance of the Colorado State Forest Service; and/or by a service/stewardship contractor using log forwarding or other techniques under the guidance of the Colorado State Forest Service or the US Forest Service.



After this treatment is completed, the residual fuel loading in this zone should be 10 tons per acre or less. Logging slash could be removed from site, chipped, jackpot burned, brought to a landing and burned, or piled on site and burned; whichever is most practical. If piled on site, logging slash will be piled to minimize scorching of surrounding trees and sterilization of the soil when it is burned. Slash piles will be placed in openings, away from trees, if possible.

## ■ **Remainder of Project Area**

The proposed vegetation treatments will increase species diversity on lower elevations, increasing fire resiliency within and around the treatment areas. Slash treatments of logging debris will emphasize the tops of the trees where fine fuels exist. These "activity fuels" will be treated by lopping and scattering, piling and burning, chipping and/or broadcast/jackpot burning. Activity fuels will be treated to be less than 10 tons/acre within 100-300 feet from private property boundaries. In mechanically treated lodgepole pine units, activity fuels will be treated to reduce fuels to less than 20 tons/acre. Fuel levels greater than 20 tons/acre will be allowed in areas that are surrounded by lower fuels areas (prescribed fire units, interface zone, etc.).

### **S.3.3 Improvement of Watershed Health**

The Forest proposes to reduce impacts from camping and promoting responsible recreation use in the following manner.

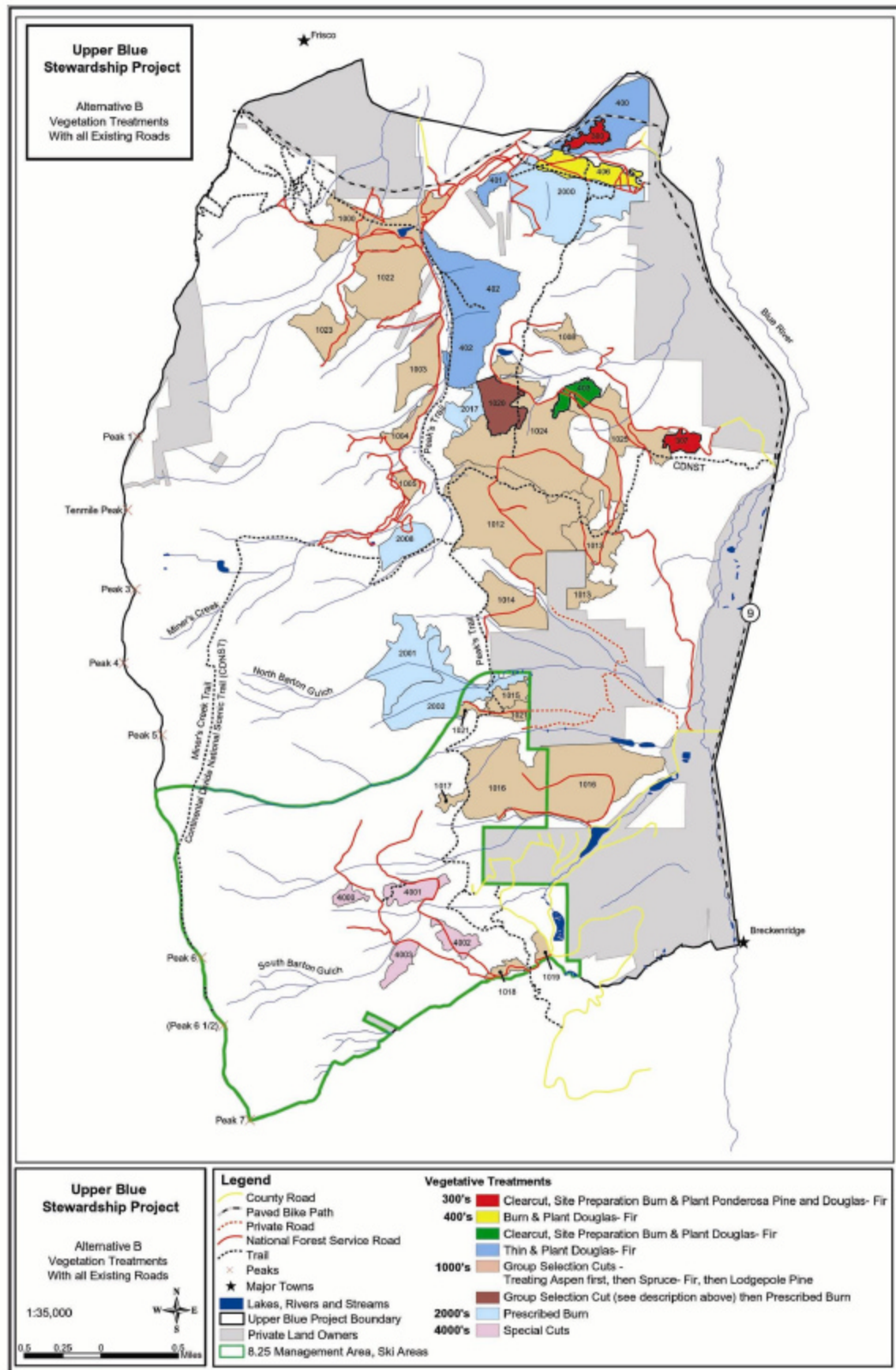
## ■ **Dispersed Recreation**

- The Forest Plan prohibits camping within a minimum of 100 feet from lakes and streams unless the terrain is advantageous or the sites can be specifically designed to protect the riparian ecosystems. All dispersed sites within 100 feet of Miners Creek will be evaluated and either closed or rehabilitated. The Forest Service will obtain and implement a Forest Supervisor's Order that will prohibit camping in undesignated sties within 100 feet of water bodies (streams, lakes, ponds) as per Forest Plan direction. Up to 12 dispersed campsites along Miners Creek will be closed or rehabilitated.
- The Miners Creek riparian area will be improved by converting the Miners Creek drainage to a "camping in designated sites only" area. Nineteen campsites will be designated in that drainage. In addition to the campsites, there will be fire grates at each of the designated sites. In an attempt to avoid fees and maintenance costs, no toilet facilities will be provided. Instead, campers will be required to carry and use a personal self-contained portable toilet similar to ones typically used when river rafting.
- One 10 car parking area will be designated west of Rainbow Lake. The current parking area south of Rainbow Lake will remain a dispersed parking area.
- At Iron Springs, 1/4 acre of wetlands will be improved by removing about 20 old timbers from the wetlands using a winch or come-along in order to repair existing damage to the wetlands.
- Six interpretive sites (approximately 10 signs) will be developed, including two historical signs (Masontown, Breckenridge end of the Peaks Trail), five vegetation interpretive signs (the Gold Hill Trailhead, and both ends of the Peaks Trail, Miners Creek Road and Sapphire Point), and three wildlife signs (Masontown, Peaks Trailhead in Breckenridge, and Gold Hill Trailhead).

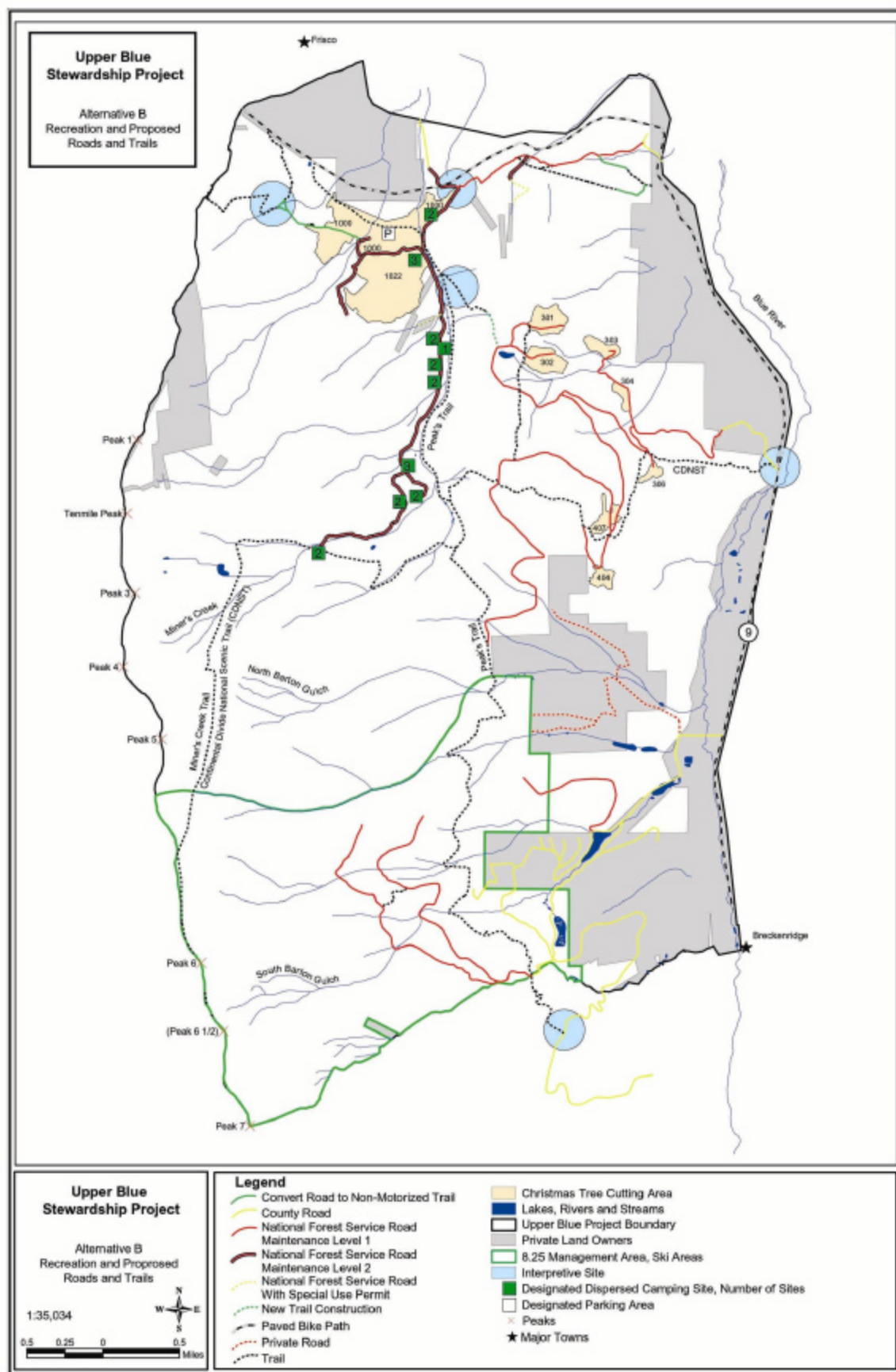
## ■ **Reducing impacts from roads and trails**

Under this alternative 4.79 miles of system roads will be open to the public, and 15.46 miles will be retained for administrative use. Of the 15.46 miles of road for administrative use, 1.39 miles will be open for ATV/motorcycle/non-motorized use, and 14.07 miles will be open for non- motorized use.

**Figure S.2 Alternative B, Vegetation**



**Figure S.3 Alternative B, Recreation**



1.15 miles of road will be converted to non-motorized trail. A total of 11.67 miles will be decommissioned. Winter use will remain unchanged. This alternative also will properly decommission system and non-system roads no longer needed, thus correcting any resource impacts caused by these roads.

In order to implement the objectives of the alternative, 0.2 miles of road will be realigned, 7.7 miles of road will undergo heavy reconstruction, and 11.57 miles will receive light reconstruction and maintenance. 4.8 miles of existing road will be temporarily used for logging. After the temporary use the roads will be decommissioned or converted to trails. Appendix E describes the road and trail categories.

There are currently 17.2 miles of non-motorized system trails and 9.7 miles of unclassified trails. Under this alternative 3.9 miles of unclassified trails would be added to the system and 5.8 miles of unclassified trails would be obliterated. Approximately 0.3 miles of new trail would be constructed and 0.6 miles of trail would be reconstructed to create a loop trail connecting the Peaks Trail and the Gold Hill Trail.

#### **S.4 PURPOSE AND NEED TIERED TO THE FOREST PLAN**

The purpose of this project is to help meet the desired conditions of the *White River National Forest Land and Resource Management Plan, 2002 Revision* (Forest Plan). The desired condition for the project area is defined by the Forestwide goals and objectives (Forest Plan, pages 1-3 through 1-17). These goals and objectives will be met while following the Forestwide and Management Area Standards and Guidelines.

The following describes existing conditions and desired future conditions expected by the Forest Plan as a result of achieving goals and objectives. The differences between the desired and existing condition of the forest resources display opportunities and site-specific actions that are needed to move toward the desired condition.

■ **Forest Plan Goal 1 - Ecosystem Health.** Promote ecosystem health and conservation using a collaborative approach to sustain the nation's forests, grasslands, and watersheds.

1. ***Desired condition:*** Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial uses (*Objective 1a*).

***Existing condition:*** The close proximity of system and non-system roads and trails in the Miners Creek drainage and the tributaries of the Blue River within the project area has resulted in sedimentation of the streams. The high density of dispersed campsites within the Miners Creek stream corridor has resulted in deterioration of the riparian areas as well as sedimentation from eroding streambanks. Over the last ten years the District has attempted to close the area adjacent to Rainbow Lake to motorized vehicles. The closures have not been successful and the public continues to drive around and near the lake, in wetland vegetation and soils. The damage to the area is significant and continued motorized use of the area will continue to impact the riparian area around the lake. In addition there are potential sanitation issues from camping in close proximity to the creek.

***Opportunities:*** Improve water quality and riparian areas by reducing runoff from roads and trails and promoting responsible recreation use.

***Proposed activity:*** There is an opportunity to improve the watershed health in the drainages within the project area by maintaining system roads and trails, closing some non-system

(unclassified) roads, adopting some non-system (unclassified) trails into the Forest Service trail system, designating dispersed camping sites in the Miners Creek drainage, designating parking at Rainbow Lake, and requiring appropriate sanitary waste disposal in the dispersed recreation area.

2. ***Desired condition:*** Provide ecological conditions to sustain viable populations of native and desired non-native species and to achieve objectives for Management Indicator Species (MIS) and focal species (***Objective 1b***). Help ensure viability of species of concern for the White River National Forest through implementation of the Forest Plan and recommendations made in the Species Viability reports (***Objective 1c***). A large portion of the project area is in Management Area 5.43, Elk Habitat, where the desired condition is low road densities and optimum forage and cover ratios as described on page 3-61 of the Forest Plan.

***Existing condition:*** The project area, as well as the remainder of Summit County, was heavily logged during the mining era (1870-1910). Many trees were removed, particularly Douglas-fir and ponderosa pine due to their superior lumber qualities. Other stands of trees were burned for a variety of reasons including carelessness, opening up foraging areas for livestock, or to expose mineral deposits. The result is a dense, relatively even-aged forest between 90-130 years old that is dominated by lodgepole pine, a relatively short-lived, disturbance-dependent species. In addition, the landscape lacks diversity of tree species and forest structure (mixed-size forests, young stands, old growth). This lack of diversity affects both long-term forest health (homogenous forests are more susceptible to insects, disease, and uncontrolled fire spread) and habitat for wildlife (the mid-successional even-age forest has limited understory forage for species such as elk and snowshoe hare).

***Opportunities:*** Improve forest health, wildlife habitat effectiveness, and fire resiliency by improving biodiversity within the project area through greater species and structural diversity.

***Proposed activity:*** Increase species and structural diversity through vegetation treatments throughout the project area.

3. ***Desired condition:*** Increase the amount of forest and rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects, disease, and invasive species (***Objective 1d***).

***Existing condition:*** The largely unbroken landscape of single-species forests in the project area is nearing the stage in development where it is becoming increasingly at risk for insect, disease and fire disturbances due to its size, age, and homogeneity. Add to this the continuous influx of urban growth at the forest interface, and the risk for catastrophic fire events and associated consequences will increase over time.

***Opportunities:*** Reduce the susceptibility of lodgepole pine to dwarf mistletoe and mountain pine beetle infestations and reduce the fire hazards to nearby private lands in the long-term by increasing species and structural diversity within the project area, and in the short-term by reducing dead fuels in old clearcuts and reducing tree crown density and ladder fuels in the wildland/urban interface.

***Proposed activity:*** Increase species and structural diversity through vegetation treatments throughout the project area. Use the Good Neighbor Agreement with the Colorado State Forest Service to reduce fuels on national forest lands where similar treatments are occurring on adjacent private lands.

- **Forest Plan Goal 2 - Multiple Benefits to People.** Provide a variety of uses, products, and services for present and future generations by managing within the capability of sustainable ecosystems.

1. ***Desired condition:*** Improve the capability of the national forests and grasslands to provide diverse, high quality outdoor recreation opportunities (***Objective 2a***). A portion of the project

area is in Management Area 4.3, Dispersed Recreation and will be managed to move toward the desired condition as described on page 3-44 of the Forest Plan.

Breckenridge Ski Resort and Breckenridge Nordic Center are also within the project area, under Management Area 8.25, Ski Areas. They will be intensively managed for outdoor recreation activities during all seasons of the year. Protection of scenic values is emphasized through application of basic landscape aesthetics and design principles, integrated with forest management and development objectives.

**Existing condition:** Incidence of summer dispersed camping within the Miners Creek corridor is heavy. The high density of dispersed campsites has resulted in deterioration of the riparian areas as well as sedimentation from eroding streambanks. Over the last ten years the District has attempted to close the area adjacent to Rainbow Lake to motorized vehicles. The closures have not been successful and the public continues to drive around and near the lake, in wetland vegetation and soils. The damage to the area is significant and continued motorized use of the area will continue to impact the riparian area around the lake. In addition there are potential sanitation issues from camping in close proximity to the creek.

Within the Breckenridge Nordic Center permit area, clearcuts exist from the 1992 South Barton timber sale. These clearcuts have sparse regeneration of spruce-fir and lodgepole pines, as well as heavy amounts of residual logging slash within the clearcuts and on the roads. The slash is not only unsightly but is also a safety hazard for skiers.

**Opportunities:** Improving the health of the riparian areas along Miners Creek and reducing the impact of vehicles around Rainbow Lake will improve the overall recreation experience. Eliminating the logging slash and opening up the old clearcut areas within the Breckenridge Nordic Center permit area would provide an opportunity for telemark skiing and would improve the scenic values while improving safety. Improving overall forest health within the Nordic Center would help improve the scenic values in the long-term.

**Proposed activity:** Designate dispersed camping sites in the Miners Creek drainage, designate parking at Rainbow Lake, and require appropriate sanitary waste disposal in the dispersed recreation area.

Pile and burn the old logging slash and remove areas of trees across 90 acres to create telemark skiing opportunities in the Breckenridge Nordic Center permit area. Improve forest health by increasing species and structural diversity through vegetation treatments throughout the project area.

2. **Desired condition:** Improve the capability of national forests and rangelands to sustain desired uses, values, products, and services (**Objective 2c**).

**Existing condition:** The young stands (approximately 14 year old clear cuts) of lodgepole pine are overstocked.

**Opportunities:** These stands need thinning, the result of which can provide small diameter products for the public or small businesses.

**Proposed activity:** Provide areas for a limited amount of Christmas tree cutting in the young stands, for personal or commercial use.

- **Forest Plan Goal 4 - Effective Public Service.** Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.

**Desired condition:** Improve the safety and economy of Forest Service roads, trails, facilities, and operations and provide greater security for the public and employees (**Objective 4a**).

**Existing condition:** In general, summer activity is concentrated in the Miners Creek drainage on

the road and trails. In addition to system roads, the area is laced with numerous non-system roads that are not built or maintained to Forest Service standards for design or safety, are poorly located, eroding, and are not funded for road maintenance.

**Opportunities:** Close unneeded roads and trails and bring those that are designated in the system up to standard.

**Proposed activity:** Maintain system roads and trails to Forest Service standard, close some non-system roads, and adopt some non-system roads and trails into the Forest Service trail system.

## **S.5     CONSISTENCY WITH THE FOREST PLAN**

Forest Plans provide the basic framework for management of National Forests. Within each Forest Plan, management direction for the Forest is established and standards and guidelines for activities are defined. In a manner similar to local government zoning, Forest Plans prescribe a management emphasis for all portions of the Forest. For example, some of the management area prescriptions in the White River Forest Plan include non-motorized recreation, timber production, livestock grazing, wildlife winter range, and downhill skiing. All uses of the national forest must be ultimately consistent with the Forest Plan.

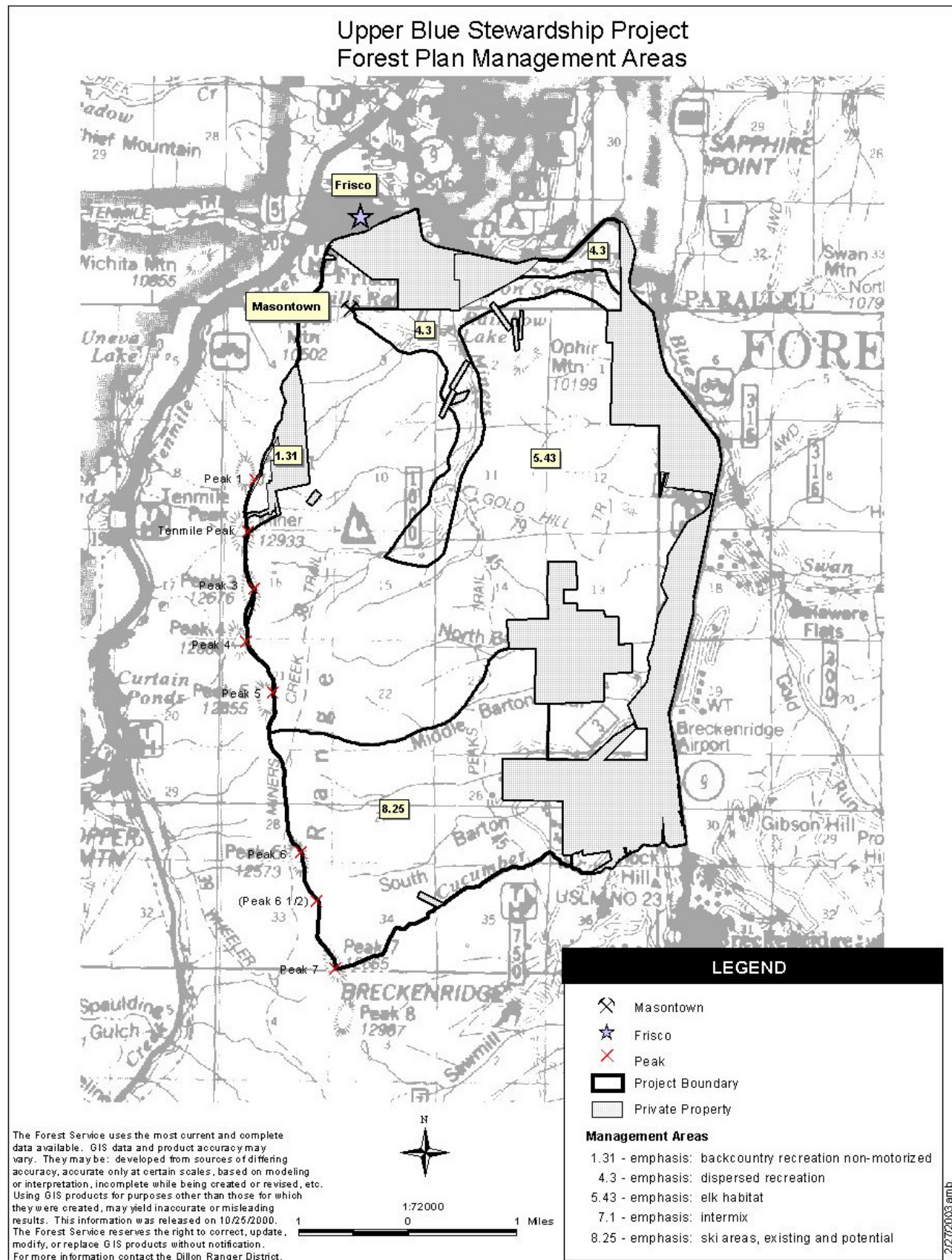
The Revised Forest Plan for the White River National Forest was approved in 2002, following preparation of an Environmental Impact Statement and Record of Decision. Because no single acre on the Forest can serve all uses at once, the Forest Plan allocates different emphases to different areas of the Forest, based on the land's capabilities. The Forest is divided into 8 management area categories with sub-categories under each one for a total of 33 separate management areas. The Upper Blue Stewardship Project area lies within four management areas: 1.31 - emphasizes non-motorized backcountry recreation, 4.3 - emphasizes dispersed recreation, 5.43 - emphasizes elk habitat, and 8.25 - emphasizes existing and potential ski areas.

*Council on Environmental Quality regulations (40 CFR 1502.20) direct agencies preparing Environmental Impact Statements to avoid repeating decisions and analysis done in broad-level, programmatic NEPA documents, such as Forest Plans and associated Environmental Impact Statements. Instead, agencies are instructed to simply reference them in a process called "tiering." In this case, the Upper Blue Stewardship Project Environmental Impact Statement is tiered to the *White River National Forest Land and Resource Management Plan - 2002 Revision*.*

The Proposed Action and its alternatives are consistent with the programmatic direction and land allocation contained in the Forest Plan.



**Figure S.4 Forest Plan Management Areas within the Project Boundary**



## **S.6 DECISIONS TO BE MADE**

This Environmental Impact Statement (EIS) is not a decision document. Its main purpose is to disclose the potential consequences of implementing a proposed action and alternatives to it. However, the EIS is prepared on the premise that certain decisions must be made and that they will be documented in a Record of Decision (ROD). The ROD will document the selection of the No Action Alternative, an action alternative, or a combination of alternatives. Comments to the draft EIS were used to prepare the final EIS and ROD. Accordingly, this EIS focuses on providing analysis sufficient for the Forest Service to make the following decisions:

1. The location and number of acres that will be treated using:
  - Clearcutting, site preparation burning and planting
  - Site preparation burning and planting
  - Thinning and planting
  - Group selection/patch clearcutting
  - Group selection/patch clearcutting followed by stand replacement prescribed burning
  - Stand replacement burning
  - Special cutting (glading)
  - Christmas tree cutting;
2. The roads on NFS lands that will remain open and at what level of maintenance the roads will be maintained;
3. The trails on NFS lands that will remain open and maintained to USFS system standards;
4. The number and location of interpretive sites that will be established;
5. The number and location of designated camping sites, fire grates, and toilet facilities in the Miners Creek Drainage; and
6. The number and location of designated parking areas that will be built and maintained.

The analysis in this Environmental Impact Statement documents the evaluation of only the actions and activities being considered within the project area. This Environmental Impact Statement will not be used to revisit previous decisions made in the Revised Forest Plan Record of Decision. It will, to the extent appropriate for each resource or discipline, consider the combined (cumulative) effects of the proposed stewardship project and other projects in close proximity to it.

## **S.7 ISSUES ASSOCIATED WITH THE PROPOSED ACTION**

An important part of any environmental analysis is to identify issues (concerns) associated with the proposed action. Based on the scoping (public involvement) process, a list of specific key issues was developed. Key issues are those that have wide geographic effects, long-term effects, or are controversial and stir public interest. Key issues are usually addressed by considering alternatives to the proposed action or proposing mitigating measures to actions. Other issues brought up by the public may be considered issues of concern but have already been addressed within the design criteria of the proposed alternatives.

The key issues that resulted from public and internal (Forest Service personnel) scoping and ID Team review are described below along with a description of how the issue will be addressed in the EIS. The Record of Decision that will accompany the Final Environmental Impact Statement will assess how well the proposed alternatives address these issues.

## ■ Air Quality

**Issue:** Proposed prescribed burnings and the subsequent smoke may affect air quality.

**Background:** Fine particulate matter is an air quality concern due to its potential to adversely impact human respiratory systems. It can also reduce visibility, an air quality attribute in scenic areas.

**How it will be addressed:** This issue will be addressed by developing an alternative that will include fewer acres of prescribed burning. It is also addressed by project design criteria. A detailed burn plan will be developed which defines mitigation measures or parameters that must be met prior to implementation. These mitigations include reducing the volume of material burned within a period of time and burning during weather conditions favorable to smoke dispersal.

## ■ Forest Health

**Issue:** How will aspen regeneration be protected from browsing?

**Background:** Young, succulent aspen shoots are attractive to deer and elk.

**How it will be addressed:** Where there is evidence of heavy elk browsing, mitigation measures will be employed, including fencing around aspen regeneration.

## ■ Fuels

**Issue:** The ability of the Forest Service to implement the prescribed burns while complying with the State air quality standards and requirements may be affected.

**Background:** The Colorado Smoke Management Memorandum of Understanding requires the Forest Service to conduct its prescribed burns under conditions permitted by the State Air Pollution Control Division. Each prescribed burn must have a burn plan that is reviewed by the Division. Burn plans are approved based on model outputs of particulate matter concentrations and visibility values at selected sensitive receptors. Following these criteria results in very small windows of opportunity to initiate prescribed burns.

**How it will be addressed:** An alternative will be developed and analyzed that will include fewer acres of prescribed burning.

**Issue:** The proposed stand-replacement burns may be too costly for the benefit received.

**Background:** The ground fuels in this area are fairly light and will likely not create enough heat needed for a stand-replacing fire. Trees would need to be felled to add to the fuel load, which would be an additional cost.

**How it will be addressed:** An alternative will be developed and analyzed that will include fewer acres of prescribed burning.

## ■ Lynx Habitat

**Issue:** The fuels treatments in the wildland/urban interface zone may affect lynx habitat.

**Background:** A permanent loss of winter foraging habitat could result where a fuels reduction treatment is needed within the wildland/urban interface zone more than 200' from a structure and potential lynx habitat exists within that area.

**How it will be addressed:** If needed, mitigation in an equal amount of lynx winter foraging habitat will be created to replace the permanently lost habitat in the wildland/urban interface zone.

## ■ Recreation

**Issue:** Requiring the public to use self-contained toilets in the dispersed recreation areas may not prevent people from “using the woods” as they do now.

**Background:** The dispersed areas along Miners Creek are receiving heavy day and overnight use during the summer, resulting in unsanitary conditions.

**How it will be addressed:** An alternative will be developed that would build a toilet for public use, increasing convenience for the campers.

## ■ Monitoring

**Issue:** How will the Forest service monitor and evaluate the proposed actions?

**Background:** Monitoring is of two types at the project level. **Effectiveness monitoring** assures that the mitigations prescribed for the project are effective and preclude significant environmental effects on the site. This type of monitoring is conducted prior to, during and following implementation of a project. **Implementation monitoring** assures that the project is implemented according to the specifications found in the Record of Decision, design narrative and the contract, if applicable. Implementation monitoring would be accomplished through job site inspections whether the work is being done by Forest Service personnel, volunteers or contractors. This would insure that the appropriate standards and guidelines are implemented to protect soil productivity, water quality and other resources.

**How it will be addressed:** Each resource specialist will describe in their report the monitoring needed for their particular resource, if applicable.

## OTHER RESOURCES

Besides the issues identified above, the Interdisciplinary Team also analyzed the effects of the proposed alternatives on other relevant resources including heritage resources, lands and minerals, non-recreation special uses, neighboring private property boundaries, and socioeconomic resources. These resources will be discussed briefly in Chapter 3, Affected Environment. Resources whose consideration is required by law or regulation--such as wetlands and floodplains--are covered at the end of Chapter 3, under Specifically Required Disclosures.

## S.8 ALTERNATIVES CONSIDERED, INCLUDING THE PROPOSED ACTION

Alternatives were developed by an interdisciplinary team (ID Team) representing various resources and uses of the WRNF such as: air, soil and water, timber, fuels, wildlife, range, heritage resources, recreation, engineering, winter sports, and visuals. The ID Team considered the following important elements while developing alternatives for this analysis:

- The goals, objectives, and desired future condition for the project area as outlined in the 2002 Forest Plan.
- The laws, regulations, and policies that govern land development on national forest.
- Comments received through public scoping on the proposed action.

The ID Team analyzed the following three alternatives in detail (see Tables S.1 for the treatment summary of the three alternatives).

### **S.8.1 Alternative A: No Action**

CEQ regulations [40 CFR 1 502.14(d)] require that agencies consider the No Action (status quo) Alternative in making decisions that affect the environment. This alternative establishes the benchmark against which the potential impacts of action alternatives should be compared. It is also a viable option for the decision maker. In selecting the No Action Alternative in a Record of Decision, the decision maker has the discretion to define conditions or terms of its implementation.

The No Action Alternative in this Environmental Impact Statement assumes that only custodial management outside the scope of the proposed action (fire protection, law enforcement, road maintenance, etc.) would continue at the present level. The No Action Alternative provides a baseline for comparison and analysis of the other alternatives. Under No Action, environmental consequences will still occur because the existing environment is not static, and custodial actions will still occur.

#### ■ **Forest Health/ Vegetation Treatments**

No vegetation treatments will occur, nor will Christmas trees be made available as a by-product of treatments within the Project Area. No glading or slash burning will be done to improve backcountry skiing opportunities.

#### ■ **Wildlife Habitat Management**

No vegetation treatments for wildlife habitat will occur

#### ■ **Fuels Management**

There will be no fuels treatments within the wildland/urban interface zone. There will be no treatment of old activity fuels.

#### ■ **Riparian Restoration/ Watershed Improvement**

***Dispersed Recreation.*** The Forest Service will obtain and implement a Forest Supervisor's Order that will close camping within 100 feet of water bodies (streams, lakes, ponds) as per Forest Plan direction unless exceptions are justified by terrain or specific design that protects the riparian and aquatic systems (Forest Plan page 2-31). As many as 12 dispersed campsites along Miners Creek would be closed or rehabilitated and brought into compliance with watershed standards. The current parking area south of Rainbow Lake will remain. No additional parking will be designated. No new interpretive sites will be added.

***Roads And Trails.*** No roads or trails would be constructed, reconstructed or decommissioned. There are 6.21 miles of system roads open to the public. Miles of roads retained for administrative use, and open to the public for summer mechanized, and non-motorized use is 12.89. There are 14.64 miles of unclassified roads. Under the 2002 Forest Plan no motorized or mechanized travel should occur on the unclassified roads. Winter use would remain the same. The 6.21 miles of open system roads will be maintained at level 2. The 12.89 miles of administrative roads will receive maintenance level 1 work. (See Appendix E for definitions.) Under this alternative no unclassified roads would be added to the system nor obliterated.

There are currently 17.2 miles of non-motorized system trails and 9.7 miles of unclassified trails. Under this alternative no unclassified trails would be added to the system nor obliterated.

### **S.8.2 Alternative B: Proposed Action**

The goal of this alternative is to implement the 2002 Forest Plan and the Upper Blue Stewardship Project's Purpose and Need by increasing vegetative diversity across approximately 2,480 acres using predominantly uneven-aged management and prescribed fire. The detailed description of this alternative can be found starting on page S-1.

### **S.8.3 Alternative C: Minimize Use Of Prescribed Fire**

Alternative C was designed to 1) address the issues of smoke management and cost of prescribed burning by reducing the acres of prescribed burning and 2) minimize the impacts of human waste in the Miner's Creek dispersed area by constructing a toilet facility.

Alternative C is the same as Alternative B with the following changes:

#### **■ Vegetation Treatments**

***Douglas-fir Units:*** Unit 406 (Approximately 52 acres) would be commercially thinned instead of broadcast burned, and then planted with Douglas-fir.

***Group Selection/Patch Clearcut Units:*** Unit 1020 would receive a group selection cut on approximately ten acres on the north and east boundaries of the Unit where slopes are less than forty percent. The entire Unit would not receive a stand replacement prescribed burn, as in Alternative B.

***Stand Replacement Burns:*** In Alternative C, there will be no stand replacement prescribed burns.

#### **■ Wildlife**

Same as Alternative B.

#### **■ Fuels**

Same as Alternative B.

#### **■ Riparian Restoration/Watershed Improvement**

***Dispersed Camping And Day Use:*** Under Alternative C a toilet building would be constructed in the Miner's Creek dispersed recreation area for the convenience of the day and overnight users. Campers would not be required to carry and use a personal self-contained portable toilet.

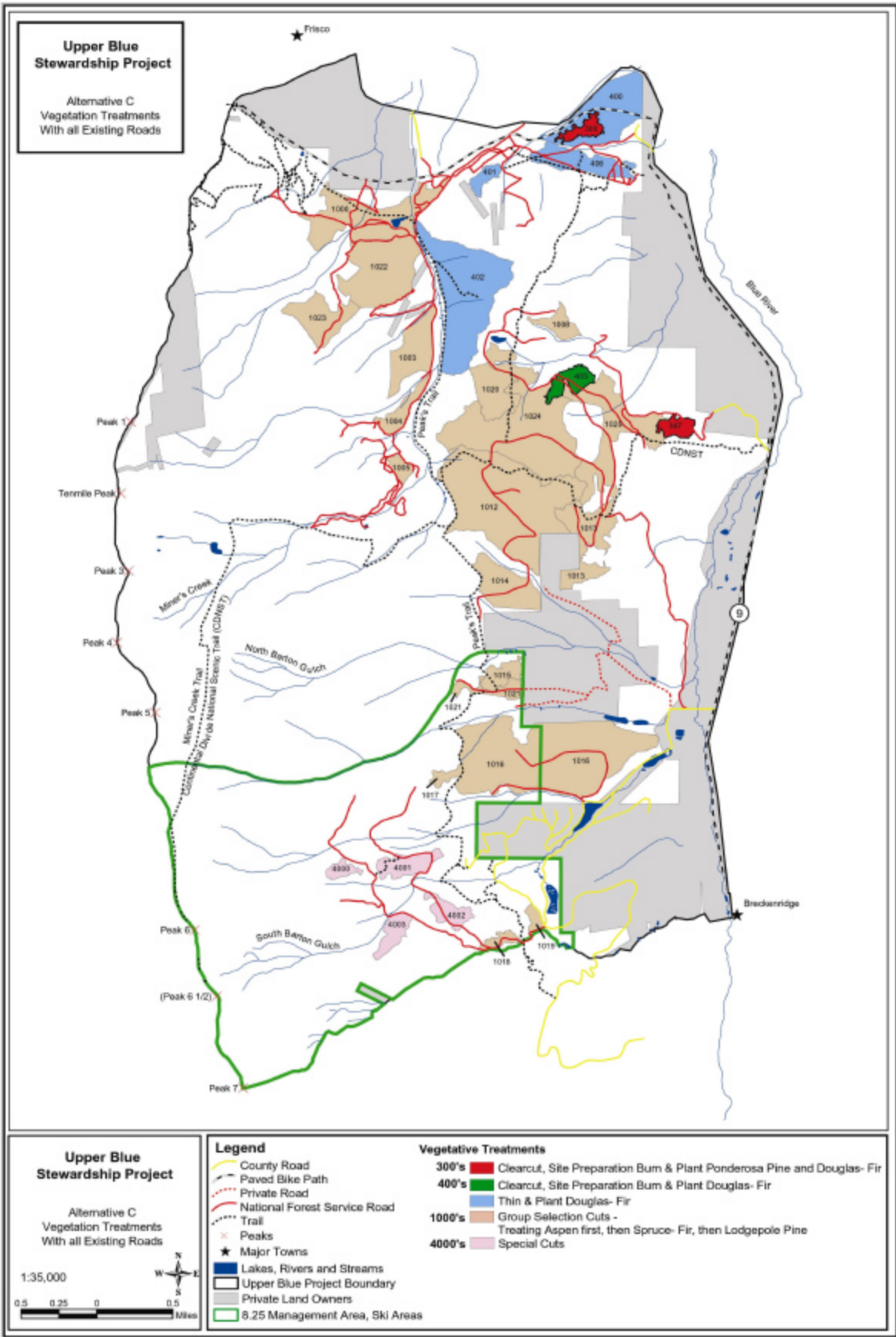
***Roads And Trails:*** Same as Alternative B.

### **DESIGN CRITERIA**

The ID Team prescribed design criteria common to all action alternatives. Design criteria are specific project design features that are built into the alternative. They give specific instructions and become part of the implementation plan. Design criteria common to all action alternatives are listed in the full FEIS.

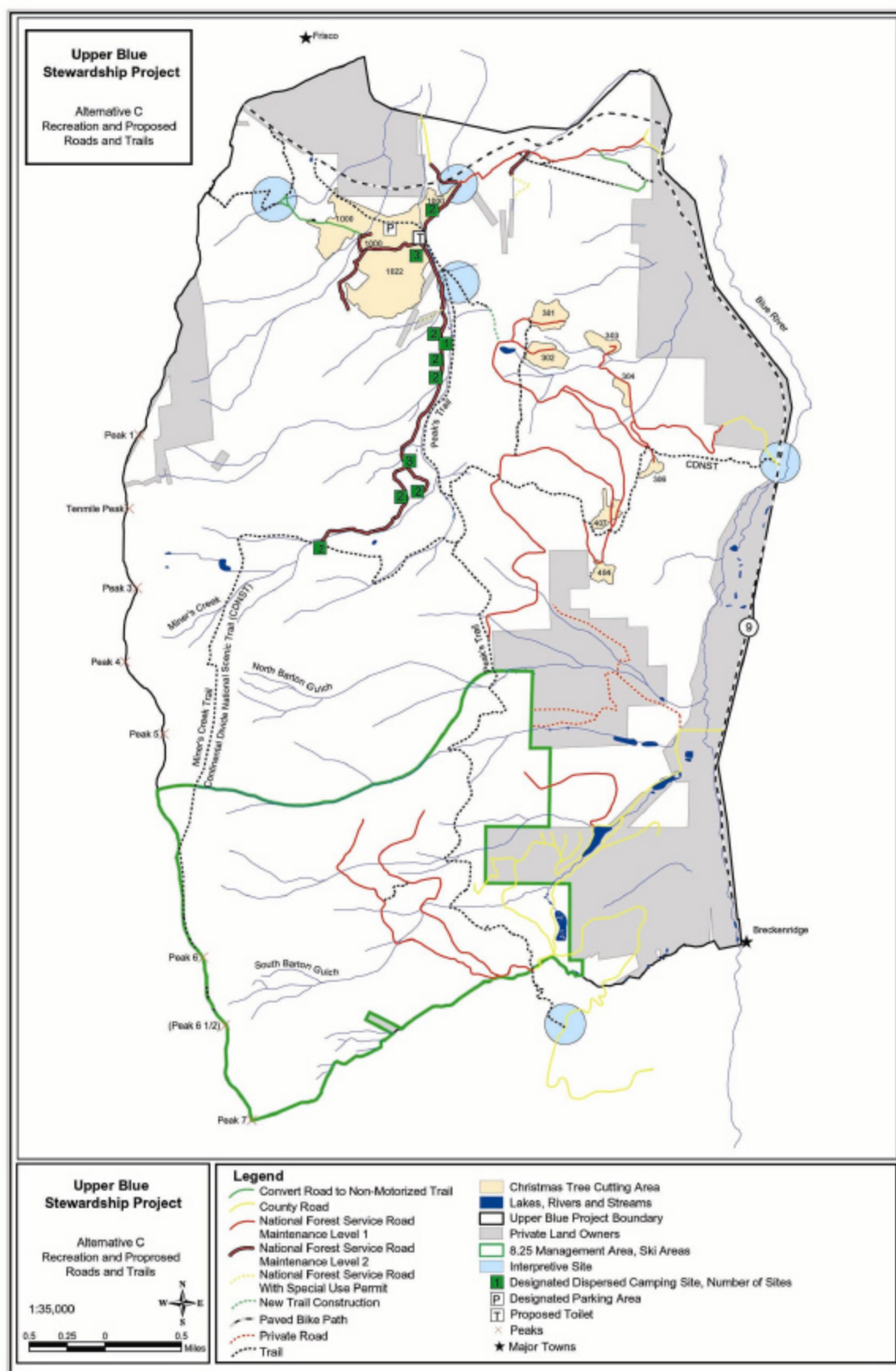


**Figure S.5     Alternative C, Vegetation**





**Figure S.6 Alternative C, Recreation**



**Table S.1 Alternative Comparison - Summary of Activities**

<b>COMPARISON ELEMENTS</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C</b>
<b>Vegetation Treatments (in acres)</b>			
Clearcut, Site Prep Burn & Plant Ponderosa Pine and Douglas-fir	0	33	33
Stand Replacement Burn & Plant Douglas-fir	0	52	0
Clearcut, Site Prep Burn & Plant Douglas-fir	0	25	25
Thin & Plant Douglas-fir	0	293	345
Group Selection Cuts (25% of the area)	0	398	398
Group Selection Cut then Stand Replacement Burn	0	51	0
Stand Replacement Prescribed Burns	0	445	0
Special Cuts - permanent openings for backcountry skiing	0	90	90
Christmas Trees generated (number)	0	10,500	10,500
<b>Total Vegetation Treatment Acres</b>	<b>0</b>	<b>1,387</b>	<b>891</b>
<b>Fuel Management</b>			
Acres of Interface Zone Treated	0	up to 450	up to 450
Acres of Stand Replacement Broadcast Burns	0	548	0
Acres Where Activity Fuels are Treated (site prep burn)	0	58	58
Acres in group selection that may be burned	0	398	398
Piles that may be burned within special cut acres	0	90	90
<b>Dispersed Recreation</b>			
Close or rehabilitate campsites within 100' of Miners Creek	Up to 12	Up to 12	Up to 12
Designated Campsites	0	19	19
Fire Grates	0	19	19
Toilets	0	0 (personal self-contained portable toilet system required)	1
Fees Charged	No	No	No
Designated parking at Rainbow Lake	none	10-car	10-car
Interpretive Sites	0	6	6
<b>Roads and Trails</b>			
National Forest System Road – Maintenance Level 1	12.9	15.5	15.5
National Forest System Road – Maintenance Level 2	6.2	4.8	4.8
National Forest System Road with special use permits	0.0	0.7	0.7
Unclassified road	14.6	0.0	0.0
<b>Road Miles Total</b>	<b>33.7</b>	<b>20.9</b>	<b>20.9</b>
Existing System Trail	17.2	17.2	17.2
Convert Road to Non-motorized Trail	0.0	1.2	1.2
Unclassified Trail	9.7	0.0	0.0
Convert Unclassified Trail to System Trail	0.0	3.9	3.9
New Trail construction	0.0	0.3	0.3
<b>Trail Miles Total - where non-motorized is main use</b>	<b>26.9</b>	<b>22.5</b>	<b>22.5</b>
Total Road Corridor Miles to Decommission	0.0	11.7	11.7
Total Trail Corridor Miles to Decommission	0.0	5.8	5.8
<b>Route Decommission Miles</b>	<b>0.0</b>	<b>17.5</b>	<b>17.5</b>
<b>Level of Directional Signing</b>	<b>minimum</b>	<b>moderate</b>	<b>moderate</b>

#### S.8.4 Alternatives Considered But Eliminated From Detailed Study

The following alternatives were considered but eliminated from detailed study due to their not meeting the purpose and need or not being feasible from an economic and technical standpoint. Chapter 2 of the full FEIS has a more detailed description and reasons for elimination for each alternative.

- Two alternatives (Alternatives C and E) were designed in the 2000 EIS to minimize mechanical and/or recreational impacts to the most critical areas, and to maximize the use of fire. These alternatives were considered again in 2002, but were dropped from consideration because they entailed more prescribed burning than could be practically implemented given current State emissions restrictions.
- An alternative (Alternative D) was designed in the 2000 EIS to maximize human benefits by designating more campsites and leaving more roads open. The IDTeam thought this would have more adverse long-term impacts than necessary.
- An alternative was considered that did not propose planting ponderosa pine. This issue was discussed at length during the formulation of the 2000 EIS. Forestry professionals differ widely in their opinions on this subject; therefore it was decided to retain the original proposal as a form of experimentation. Planting ponderosa pine will help meet the project objectives and its success will be monitored and evaluated for future biodiversity management

#### S.9 COMPARISON OF THE ALTERNATIVES BY RESOURCE

The issues associated with the proposed action were assigned indicators that were used to measure the effects of each alternative. The following tables compare the alternatives in terms of the indicators. Additional discussion of these issues and other important issues is found under the appropriate resource section in Chapter 3 of the full FEIS.

The following tables summarize how each alternative responds to the purpose of and need for the project.

<b>Table S.2 Watershed Improvement to Reduce Impacts from Dispersed Recreation, Roads, and Trails</b>			
<b>COMPARISON ELEMENTS</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Min. Fire Use</b>
<b>Dispersed Recreation</b>			
Close or rehabilitate campsites within 100' of Miners Creek	Up to 12	Up to 12	Up to 12
Designated Campsites	0	19	19
Toilets	0	0 (personal self- contained portable toilet system required)	1
Designated parking at Rainbow Lake	none	10-car	10-car
<b>Roads and Trails (miles)</b>			
Convert Road to Non-motorized Trail	0	1.1	1.1
Total Road Corridor Miles to Decommission	0	11.7	11.7
Total Trail Corridor Miles to Decommission	0	5.8	5.8

**Table S.3 Increase diversity for Forest Health, Wildlife, and Fire Resiliency**

*Species Diversity - The more varieties of tree species and of structural stages (age class), the healthier the forest and the greater the fire resiliency.*

			Alternative A		Alternative B		Alternative C	
Tree Species and Successional Stages	Existing Acres	Existing %	Year 5 Acres	Year 60 Acres	Year 5 Acres	Year 60 Acres	Year 5 Acres	Year 60 Acres
<b>Spruce/fir</b>								
Early	135	7%	135	0	162	0	163	0
Intermediate	327	18%	327	135	327	72	327	73
Late	1,080	58%	1,080	1,407	1,080	1,407	1,080	1,407
old growth*	321	17%	321	321	321	321	321	321
<b>Total</b>	<b>1,863</b>	<b>100%</b>	<b>1,863</b>	<b>1,863</b>	<b>1,800</b>	<b>1,800</b>	<b>1,801</b>	<b>1,801</b>
<b>Lodgepole Pine</b>								
Early	341	5%	341	0	1,115	0	676	0
Intermediate	3,831	57%	3,831	4,172	2,589	3,701	3,068	3,744
Late	2,527	38%	2,527	2,527	2,475	2,475	2,475	2,475
<b>Total</b>	<b>6,699</b>	<b>100%</b>	<b>6,699</b>	<b>6,699</b>	<b>6,179</b>	<b>6,176</b>	<b>6,219</b>	<b>6,219</b>
<b>Aspen</b>								
Early	80	23%	80	0	173	0	125	0
Intermediate	264	75%	264	0	264	0	264	0
Late	9	2%	9	353	9	446	9	398
<b>Total</b>	<b>353</b>	<b>100%</b>	<b>353</b>	<b>353</b>	<b>446</b>	<b>446</b>	<b>398</b>	<b>398</b>
<b>Ponderosa Pine mix</b>								
Early	0	--	0	0	33	0	33	0
Intermediate	0	--	0	0	0	33	0	33
<b>Total</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>33</b>	<b>33</b>	<b>33</b>
<b>Douglas-fir</b>								
Early	0	--	0	0	370	0	370	0
Intermediate	0	--	0	0	0	370	0	370
Late	0	--	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>--</b>	<b>0</b>	<b>0</b>	<b>370</b>	<b>370</b>	<b>370</b>	<b>370</b>
<b>All Species All Stages Total</b>	<b>8,915</b>	<b>--</b>	<b>8,915</b>	<b>8,915</b>	<b>8,825</b>	<b>8,825</b>	<b>8,825</b>	<b>8,825</b>

\* The new Forest Plan only identifies spruce/fir old growth stands as that is the only cover type that has a standard associated with it. See pages FF-2, 3 in the Forest Plan for more information.

The acres of forested cover decreases by 90 acres in Alternative B and C in year 60 because of the special cuts. The special cuts are currently in an early spruce/fir condition. Many of the small trees will be cut to provide for gladed skiing and the units will become understocked. Additionally, in year 60, some of the late successional spruce/fir stage may be approaching old growth characteristics.

**Table S.4 Reduce Susceptibility to Dwarf Mistletoe**

Alternative	Acres With A Dwarf Mistletoe Rating < 0.5
<b>A – No Action</b>	5,243
<b>B – Proposed Action</b>	5,624
<b>C – Minimized Use of Prescribed Fire</b>	5,597

**Table S.5 Reduce Susceptibility to Mountain Pine Beetle**

Alternative	Low Risk		Moderate Risk		High Risk	
	acres	%	acres	%	acres	%
<b>A – No Action</b>	357	5	5,930	89	412	6
<b>B – Proposed Action</b>	1,607	24	4,786	71	306	5
<b>C – Minimized Use of Prescribed Fire</b>	1,124	17	5,269	78	306	5

**Table S.6 Increase Fire Resiliency and Defensibility**

COMPARISON ELEMENTS	Alternative A No Action	Alternative B Proposed Action	Alternative C
<b>Fuel Management</b>			
Acres of Interface Zone Treated	0	up to 450	up to 450
Acres of Stand Replacement Broadcast Burns	0	548	0
Acres Where Activity Fuels are Treated (site prep burn)	0	58	58
Acres in group selection that may be burned	0	398	398

**Table S.7 Improve Wildlife Habitat Capability (5 years)**

**Change In Wildlife Habitat Capability Indices Compared to Alternative A (No Action)  
5 Years After Treatment**

*Vegetation alteration changes forest species and structural diversity, which in turn changes wildlife habitat capability.*

MIS Species (Project Area)	Habitat Capability Index		% Change in Index Compared to Alternative A	
	Alternative B	Alternative C	Alternative B	Alternative C
Elk-summer	0.43	0.40	66	55
Elk-winter	0.43	0.39	18	8
Snowshoe hare	0.43	0.42	13	9
Pygmy nuthatch summer HABCAP model for year round use*	.26	.28	-19	-12
Pygmy nuthatch-winter HABCAP model for year round use*	No habitat	No habitat	No change	No change
<b>MIS Species (DAU-13 Area)</b>				
Elk-summer	0.4556	0.4540	1.5	1.2

*\*The HAPCAP seasonal models for pygmy nuthatch are used to display two different scenarios regarding year-round pygmy nuthatch habitat use in the project area. See Chapter 3 for discussion.*

<b>Table S.8 Improve Wildlife Habitat Capability (60 years)</b>				
<b>Change In Wildlife Habitat Capability Indices Compared to Alternative A (No Action) 60 Years After Treatment</b>				
<i>Vegetation alteration changes forest species and structural diversity, which in turn changes wildlife habitat capability.</i>				
<b>MIS Species (Project Area)</b>	<b>Habitat Capability Index</b>		<b>% Change in Index Compared to Alternative A</b>	
	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative B</b>	<b>Alternative C</b>
Elk-summer	0.32	0.32	42.7	42.0
Elk-winter	0.32	0.32	0.4	0.2
Snowshoe hare	0.35	0.35	5.9	5.7
Pygmy nuthatch summer HABCAP model for year round use*	.32	.32	-6.1	-5.7
Pygmy nuthatch-winter HABCAP model for year round use*	.003**	.003**	Creates 33 acres of pygmy nuthatch habitat**	Creates 33 acres of pygmy nuthatch habitat**

\*The HAPCAP seasonal models for pygmy nuthatch are used to display two different scenarios regarding year-round pygmy nuthatch habitat use in the project area. See text for discussion.

\*\*When ponderosa pine plantings reach a mature stage.

## **S.10 COMPARISON OF HOW THE ALTERNATIVES AFFECT THE ENVIRONMENT**

The following tables compare how each of the three alternatives being considered will affect resources. Detailed discussions of these impacts and other important issues are found under the appropriate resource sections in Chapter 3 of the FEIS.

<b>Table S.9 Environmental Impacts on Air Quality</b>				
<b>Annual PM Concentrations of Proposed Fuel Treatments</b>				
	<b>PM<sub>2.5</sub> (tons)</b>		<b>PM<sub>10</sub> (tons)</b>	
	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative B</b>	<b>Alternative C</b>
Stand Replacement Burn	170	0	199	0
Site Prep Burn	13	13	16	16
Pile and Burn	54	55	63	65
<b>Total</b>	<b>237</b>	<b>69</b>	<b>279</b>	<b>81</b>

Table S.10 Environmental Impacts on Water Quality						
Watershed	Connected Disturbed Area (acres)			Stream Network Expansion (% Change due to roads)		
	Alt. A	Alt. B	Alt. C	Alt. A	Alt. B	Alt. C
Miners Creek	6.2	3.7	3.7	15.3	8.5	8.5
Peak One Creek	.9	.6	.6	6.2	4.9	4.9
North Barton	.5	.5	.5	3.4	3.4	3.4
Middle Barton	.3	.3	.3	3.2	3.0	3.0
South Barton	1.8	1.8	1.8	9.7	9.7	9.7
Cucumber Creek	.7	.7	.7	8.7	8.7	8.7
Ophir Creek	.5	.5	.5	8.1	8.1	8.1
Blue River	1.6	1.5	1.5	n/a	n/a	n/a
<b>Total</b>	<b>12.5</b>	<b>9.6</b>	<b>9.6</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>

Table S.11 Environmental Impacts on Stream Health			
Watershed	Predicted Stream Health Class		
	Alternative A	Alternative B	Alternative C
Miners Creek	Robust	Robust	Robust
Miners Creek Tributary	Nonsupporting	Supporting or Robust	Supporting or Robust
Peak One Creek	Robust	Robust	Robust
North Barton	Robust	Robust	Robust
Middle Barton	Robust	Robust	Robust
South Barton	Robust	Robust	Robust
Cucumber Creek	Supporting	Supporting	Supporting
Ophir Creek	Nonsupporting	Nonsupporting	Nonsupporting

Table S.12 Environmental Impacts on Soils				
<i>Expected Erosion Rates within Land Type Associations by Alternative</i>				
Alternative	Description of Treatment Elements	Relative Erosion Rates (Tons/Acre/Year)		
		LTA M103	LTA M204	LTA V202
Alternative A No Action	Current Erosion Condition (in absence of disturbance)	1.18	0.00	0.00
Alternatives B and C Action	Additional Erosion 1 <sup>st</sup> Year Following Harvest & Site Prep. Burn	NA	2.11	1.42
	Additional Erosion 3 yrs Post Harvest & Site Prep. Burn	NA	0.66	0.42
	Additional Erosion 1 <sup>st</sup> Year Following Clearcut or Group Selection	NA	0.01	0.01
	Additional Erosion 3 yrs Post Clearcut or Group Selection	NA	0.00	0.00
Wildfire Scenario	Erosion 1 <sup>st</sup> Year Following Severe Wildfire	2.82	6.69	4.51
	Erosion 2 yrs (M103) and 3 yrs (M204, V202) Post Wildfire	1.97	1.55	1.03



**Table S.13 Cost of Fuels Treatments by Alternative**

<b>Treatment</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Min. Fire Use</b>
Cost of Interface Zone Treatment	0	Up to \$533,772	Up to \$533,772
Cost of Stand Replacement Broadcast Burn	0	\$68,625	0
Cost Where Activity Fuels are Treated (site prep burn)	0	\$4,000	\$4,000
Cost of group selection that may be burned	0	Up to \$11,850	Up to \$12,240
Cost where piles may be burned in special cut units	0	Up to \$2,700	Up to \$2700

**Table S.14 Environmental Impacts on Wildlife Habitat Effectiveness**

<b>Indicators</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Min. Fire Use</b>
Changes in winter snow compaction in lynx habitat (outside of permitted ski area boundaries)	None	None	None
<b>Forest Plan Diversity (Meets/Does Not Meet Forest Plan Minimums)</b>			
Travelway density (miles/sq. mile) in MA 5.43	Meets	Meets	Meets
Snags (FP Standard)	Does not meet	Meets	Meets
Snag recruitment (FP Standard)	Meets	Meets	Meets
Woody debris (FP Standard)	Does not meet	Meets	Meets
Acres retained in late successional forest	Meets	Meets	Meets

**Table S.15 Environmental Impacts on Lynx Habitat***Estimated Changes In Lynx Habitat Parameters*

<b>Lynx Habitat Parameter</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Min. Fire Use</b>
% Unsuitable Habitat-Swan LAU 2-years post-treatment	6.0 %	8.7 %	7.8 %
% Unsuitable Habitat-Snake LAU 2-years post-treatment	5.5 %	6.7 %	6.1%
Acres Unsuitable Habitat-Project Area 2-years post-treatment 20-years post-treatment 60-years post-treatment	476 acres 0 acres 0 acres	1927 acres 540 acres* 540 acres*	1392 acres 540 acres* 540 acres*
% Denning Habitat-Swan LAU 2-years post-treatment	13.7 %	13.7 %	13.7 %
% Denning Habitat-Snake LAU 2-years post-treatment	16.2 %	16.2 %	16.2 %
Net Acres Winter Foraging Habitat Created 2-years post-treatment 20-years post-treatment 60-years post-treatment	0 acres 0 acres 0 acres	-85 acres +1,104 acres -73 acres	-10 acres +696 acres -72 acres

\*Acres in special cuts and interface treatments.

Table S.16 Environmental Impacts on Sensitive Species			
Biological Evaluation (BE) Determinations			
Species	Alternative A No Action	Alternative B Proposed Action	Alternative C Min. Fire Use
<b>Plants</b>			
Sea pink	NI	NI	NI
Clawless draba	NI	NI	NI
Gray's Peak whitlow-grass	NI	NI	NI
Ice cold buttercup	NI	NI	NI
Porter feathergrass	NI	NI	NI
Kotzebue grass-of-Parnassus	NI	NI	NI
Altai and russet cottongrass	NI	NI	NI
<b>Fish</b>			
Colorado River cutthroat trout	NI	NI	NI
Bluehead Sucker	NI	NI	NI
Flannelmouth sucker	NI	NI	NI
Mountain sucker	NI	NI	NI
Roundtail chub	NI	NI	NI
<b>Amphibians</b>			
N. leopard frog	NI	NI	NI
Boreal toad	NI	MAII	MAII
<b>Mammals</b>			
American marten	NI	MAII	MAII
River otter	NI	MAII	MAII
Pygmy shrew	NI	MAII	MAII
Wolverine	NI	NI	NI
<b>Birds</b>			
Northern goshawk	NI	St-MAII Lt-BNI	St-MAII Lt-BNI
Flammulated owl	NI	NI	NI
Boreal owl	NI	MAII	MAII
Olive-sided flycatcher	NI	MAII	MAII
Northern 3-toed woodpecker	NI	MAII	MAII
White-Tailed ptarmigan	NI	MAII	MAII
Northern harrier	NI	NI	NI
Peregrine falcon	NI	NI	NI

*\*Includes only sensitive species that occur or have potential habitat that may be present in the project area. All alternatives will have "no impact" on other Forest sensitive species.*

*NI - No impact.*

*MAII - May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to a federal listing or a loss of species viability range-wide.*

*BNI - Beneficial impact*

*St-short-term impact; Lt-Long-term determination*

*\*\*548 acres of prescribed stand replacement fires in Alternative B could temporarily increase northern three-toed woodpecker numbers if large numbers of snags that attract insects are created as is expected.*

**Table S.17 Environmental Impacts on Threatened, Endangered, Proposed, and Sensitive Species**

Federally listed Species	Biological Assessment (BA) Determinations		
	Alternative A No Action	Alternative B Proposed Action	Alternative C Min. Fire Use
Penland alpine fen mustard	NE	NE	NE
Uncompahgre fritillary butterfly	NE	NE	NE
Bald eagle	NE	NLAA	NLAA
Canada lynx	NE	NLAA	NLAA
Colorado pikeminnow	NE	NLAA	NLAA
Humpback chub	NE	NLAA	NLAA
Razorback sucker	NE	NLAA	NLAA
Bonytail chub	NE	NLAA	NLAA

NE= No Effect

NLAA = may affect, but Not Likely to Adversely Affect the species or its habitat

LAA = may affect, Likely to Adversely Affect the species or its habitat

**Table S.18 Environmental Impacts on Noxious Weed Spread**

**Factors that Affect the Spread of Noxious Weeds, by Alternative**

	Alternative A No Action	Alternative B Proposed Action	Alternative C Min. Fire Use
Total Acres of Ground Disturbance	0	1,384	901
Available corridors for seed transport (Total motorized miles)	33.7	20.9	20.9
Available corridors for seed transport (Total non-motorized miles)	26.9	22.5	22.5

**Table S.19 Estimated Financial Efficiency by Alternative (millions of dollars)**

	Alternative A No Action	Alternative B Proposed Action	Alternative C Min. Fire Use
Present net benefits	\$.010	\$.051	\$.051
Present net costs	\$-.001	\$-1.615	\$-1.929
Present net value	\$.008	\$-1.564	\$-1.878

Source: Quicksilver, 2003.

Figures may not add due to discounting and rounding.

## **S.11 IDENTIFICATION OF THE SELECTED ALTERNATIVE**

Alternative B was identified as the preferred alternative in the DEIS for the Upper Blue Stewardship Project. The Selected Alternative for implementation is Alternative C with modifications described in the Record of Decision.